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NATIONAL INTELLIGENCER.

AGRICULTURAL PROGRESS OF THE U. STATES.

To the Editors of the National Intelligencer:

The statistics of Agriculture, as far as they have been published from the Census Office, disclose many instructive facts. To promote the farming interest, and bring some of the most prominent features of this branch of national industry under the eye of legislators and the people, I respectfully solicit a small space in your paper to call attention to the progress made by a nation of farmers.

Maize is the most important crop grown in the United States. It is one of the staples of every State and Territory, not excepting Oregon, whose climate is least friendly to this American cereal. The United States census of 1840 makes the corn crop of the year preceding 737,531,875 bushels. The census of 1850 shows that the crop of 1849 was 591,586,058. In 1850, 214,054,178 bushels. These figures indicate a gain of fifty-seven per cent.; while the increase of population was not far from thirty-four per cent. Corn being one of the most profitable crops grown anywhere, I have studied its increase and decrease in the several States with much interest; but a due respect for the numerous claims upon your columns forbids an extended notice of even the most abundant and remunerative product of our national industry. Allow me, however, to say that New York produced in 1839 10,972,286 bushels; and in 1849 17,944,808 bushels. This, for an old State whose rural population increased but little in the last decade, is a large and creditable gain.

It is one of the many good fruits of her excellent agricultural societies, known all over this extended Republic, as well as in Europe. Pennsylvania has advanced her corn culture considerably, although less than New York. Her crop in 1839 was 14,240,022 bushels; in 1849 it was 17,707,702. Gain 5,467,680 bushels. She will do better in the present decade.

Georgia has sustained an agricultural journal for the last nine years, and a flourishing State Society and others some five years. Her corn crop in 1839 was 20,905,122 bushels; in 1849 it was 30,428,540. While Georgia has added to her annual harvest of maize 9,523,418 bushels in ten years, South Carolina has increased hers only 1,549,503 bushels.

Ohio has recently well-organized agricultural societies, and an efficient Board of Agriculture. Her corn crop in 1839 was 33,668,144 bushels; in 1849 it was 58,922,783. Gain in ten years 25,254,639 bushels.

These official statistics speak volumes in favor of agricultural societies, and legislative aid for their support. They are composed of practical rearing farmers; and I am happy that men of this stamp are making an earnest effort to organize a national agricultural society. Should they, in its feeble infancy, ask for a little assistance from Congress, it is to be hoped that such small aid as State Legislatures grant to State societies will not be withheld. To say nothing of the large increase in her grain crops, New York, by giving some forty-five societies less than \$8,000 a year, has increased the products of her dairies over fifty per cent. The recent census shows the immense product of over eighty-two million pounds of butter (82,043,823 pounds). Cheese 49,785,905 pounds. In the production of these articles the gain from buttermilk and whey in pork making amounts to millions of dollars.

Unlike the farmers of New York and Ohio, those of Virginia have failed to discover the advantage of united efforts for the promotion of agriculture. In 1839 the corn crop of Virginia was 34,577,591 bushels; in 1849 it was only 35,538,582. Gain in ten years but 960,991 bushels.

With a view to correct what I cannot but regard as an erroneous judgment in that noble Commonwealth, I state the fact that from no other State in the Union has opposition been seen or felt to a national agricultural society. Intelligent business men combine their efforts and means to advance commercial, manufacturing, banking, railroad, and educational interests; and why should not farmers unite their wisdom and labors to promote improvements in tillage and husbandry? The science of combinations is as applicable to agriculture as to any other business pursuit whatever. Isolated cultivators of the earth may increase their knowledge and improve their farming operations a very little in the lifetime of a generation, but their progress will be so far exceeded by such as skillfully combine their individual powers that the former will appear to retrograde, not advance.

Agricultural improvement has taken deep root in the soil of Maryland, and her corn and wheat crops have increased faster than her population in the last decade, including the large gain in the city of Baltimore. There is reason to believe that these staples will be doubled, without any increase of tilled land, by the year 1860, if the Legislature of that State foster the plan of its State Society to establish and maintain an agricultural college and experimental farm.

DANIEL LEE.

TRUTH IN VERSE.

FROM THE BOSTON DAILY ADVERTISER.

KORSHUT'S APPEAL.

Ye vain Republicans have little known me:
I come no suppliant for scant relief;
Bright gold, sharp steel I claim, and they crown me,
On the proud Magyar's ancient throne, a Chief.
With broad wing higher over ocean flying,
Sweeping o'er fated Europe wide and far,
Behold the genius of the battle crying,
Seize ye the torch that lights the flames of War!
Hear, pause not to sigh for hearts forsaken;
The woodman, and the tiller of the soil,
And ye who ply the busy loom, awake!
A richer harvest waits, a nobler toil.
Forth the arts of peace, and with them perish
Gold-frighted commerce on the wide spread sea;
Old memories of ocean's glories perish,
And to armadas turn your argosies!
My sentence is for open war, like his,
The fallen rebel-bell in Milton's verses;
And I can weave you winning falcons;
To make the better reason seem the worse.
War, war I ask; and I will give you glory—
Give me your all for ruin and renown;
When men unborn shall tell the Magyar story,
Be it said, ye watched their star go down!

The Daguerreotypists of Boston are taking daguerrotype likenesses very successfully by the Drummond light. It is said that they can measure the effects of the light more nicely than they can when taken by the sunlight.

Witty sayings are as easy lost as the pearls slipping off a broken string, but a word of kindness is seldom spoken in vain. It is a seed which, even when dropped by chance, springs up a flower.

TO THE EDITORS.

Messrs. Gales & Seaton: I would respectfully submit the following questions:

First: May not an American believe that few or no foreign nations are as yet fit for republican institutions without being guilty of treason to the cause of republicanism, and thereby losing his right to be considered a wholesome member of the American nation?

Second: Is not that American more thoroughly, essentially American, who does believe that the only one of the "peoples" of the globe that is up to republicanism is the people of this country, than another who asserts that "the rest of mankind" are quite as capable of it as we are?

Third: May not an American prefer to see in Europe even a despotism which secures a certain amount of order and prosperity than a Government which, though called republican, is productive of nothing but confusion and evil?

Fourth: Is republicanism an end or only a means of obtaining national well-being? and, if the latter, is it unwise and unchristian to wish its establishment in countries where it will verify the old Baconian maxim, *Optima natum pessima perversione*?

Fifth: Are not those the worst enemies of genuine republicanism who advocate and extol its counterfeit, and thus make it responsible for all the evil of the latter?

Sixth: Have not the republicans of Europe done more to make republicanism there "smell to Heaven" than all the thrones and Powers combined? Have they not, in fact, sacrificed the goddess Liberty upon her own altar?

Seventh: May an American express an opinion favorable to the recent coup d'état in France as calculated to produce better results than would have been consequent upon a continuance of the state of things which it destroyed?

Eighth: Might he dare just to hint the possibility that Louis Napoleon is not altogether so "replenished a villain" as he is pronounced to be for making the coup d'état, and that he may, peradventure, have had some remote promptings of patriotism in violating a constitution which evidently, from its treatment by all parties, was made for the express purpose of being violated, and was never unviolated from the outset?

Ninth: Might he, in the same concatenation, accordingly venture to think his soul his own, if he were to allow the slightest suspicion to cross his mind that Kosuth is a little of a humbug, and not altogether a "heterogeneous compound of impossible perfections"?

Tenth: Is not the old poet right who declares that

"Opinion
Cannot, in matters of opinion, err?"

Eleventh: Is not that the principle theoretically proclaimed by our Constitution? and are we not practically, in regard to opinions, the most intolerant people, collectively and individually, on earth?

Twelfth: Are we not always virtually asserting that those who don't agree with us in opinion, upon whatever subject, foreign or domestic, must be either fools or knaves? and might it not be supposed, from the way in which differences of opinion are reciprocally denounced by us, that an honest or a wise man is a rarer bird in the land than the phoenix itself?

Thirteenth: Isn't orthodoxy my dog, and heterodoxy your dog, from Maine to Louisiana, and all the way round?

Fourteenth: Will you have the goodness to publish the foregoing pertinent or impertinent queries, and oblige

AN INQUIRER.

PHILOSOPHICAL INQUIRY.

LOGANSPORT, (LA.) JANUARY 20, 1852.

Messrs. Gales & Seaton: I observe that you sometimes give portions of your space to philosophical questions. The following facts are not explained in the books, as far as I have been able to examine.

Water at forty-two degrees Fahrenheit occupies its smallest space. From this point, when the heat is increased, it expands; when the heat is decreased it also expands. We have here the same effect from two opposite causes.

It is found that water is slightly compressible, and that its elementary particles are globular in shape. Its compressibility proves that its particles are in some degree elastic. My hypothesis is, that the greatest elasticity of these particles takes place at the degree of heat at which water occupies the smallest space. Each particle would then somewhat encroach on the surrounding particles that it touched it, whereby the whole would fill less space than it would if each particle was entirely round. Heat expands water doubtless by the same law that it expands other bodies. On the contrary, I suppose that by decreasing the heat the particles become less elastic, and at the freezing point each one demands its entire rotundity, which would of course increase the general bulk.

Again: Water at rest when freezing shoots out little spires of ice, which meet or cross each other at angles of sixty or one hundred and twenty degrees. A snow flake, when viewed through the microscope, shows crystals marked by the same angles.

If the elementary particles of water are globes, these angles are the only directions in which their sides can touch each other. In freezing, then, these spires of ice would necessarily follow the one or the other of these angles. The fact is easily proved. Take a saucer with enough bird-shot in it to cover the bottom, and it will be seen at once, by applying a small quadrant, that the only direction in which the shot can touch each other is at one or the other of these angles. The same is true of larger or smaller globes, if they are regular in size.

Respectfully,
HORACE P. BIDDLE.

A VOICE OF WARNING.—The following words of warning are contained in a letter from JAMES WILSON, formerly a member of Congress from New Hampshire, now of California, and may prove "word in season" to some of the many hundreds who are preparing to embark for California in quest of gold. The letter is dated December 4, 1851, and says:

"We have a rich and productive soil, easily worked, and a good market for every kind of vegetable. If people would come to California with any thing like reasonable hopes and expectations, if they would bring with them habits of industry, economy, perseverance; if they would steadily apply themselves to farm labor and be satisfied with reasonable returns, in due season they could not fail of success. But they do not and will not come here with any such views. If they had some little sense when they left home, it is all gone when they get to California. The glitter of gold bewitches them, and nothing but a desperate adventure for a fortune will satisfy them."

"Your Eastern people have entirely erroneous opinions about California. The common idea is, that if a person can only get to California he has nothing to do but to scrape up the gold by the shore until he satisfies all the cravings of avarice. The adventurer for California starts with this opinion; his mind is all absorbed in thoughts about linen sacks, buckskin bags, and close purses to hold his gold; he is anxiously contriving how to pack, keep, and safely transport his precious yellow dust. His beautiful reverie is never for a moment disturbed by a doubt of his getting it."

"It is a great and fatal mistake. It is enough of itself to blast the prospects of nine out of ten of all the people who come to California. The stern experience of the practical miner soon dispels the error, and the poor deluded sufferer is discouraged, disheartened, and mortified; he loses his energy and fortitude; he sickens and dies. 'I have seen many such cases, and I dare not advise any of my numerous correspondents to come to California. Those who stand well had better stand still.'"

MEMORANDUM.

In an article published in the National Intelligencer of the 31st of January, under the title of "The Hungarian Inroad," there is, amongst other things, a statement of the historical facts which preceded the establishment of the union between Sweden and Norway in 1814, and of the terms upon which it was based, as well as of the feelings which now animate the Norwegian people towards their brother country. The following expressions used in this article—viz: "the transfer was completed, and Norway to this day remains as an appendage of Sweden"—convey an erroneous idea of the real state of things that it is due to historical truth to have them corrected.

It is true, indeed, that by the treaty of peace concluded between Sweden and Denmark, at Kiel, on the 14th of January, 1814, the King of Denmark renounced, in favor of the King of Sweden, all his rights and titles to the kingdom of Norway; which, however, according to the 5th article of the same treaty, was guaranteed in the enjoyment of the liberties and privileges existing at that time.

It is also a known fact that the Norwegian people declared their independence, elected the Prince Christian Frederick of Denmark (at that time Governor of Norway) their king, and formed the constitution which was sanctioned by him May 17, 1814; and that the King of Sweden marched his army into Norway under the command of the Crown Prince, afterwards King Charles John; but after some hostilities had taken place, and the Norwegian people becoming sensible of the uselessness of further resistance, and aware of the advantages of a union with Sweden, a convention was concluded at Moss on the 14th of August, 1814, between the Crown Prince of Sweden, in the name of his Swedish Majesty on the one side, and the Norwegian Government on the other, by which Prince Christian renounced his executive authority, and the Constitution of Norway was acknowledged by the King of Sweden, with the modifications which the union between Sweden and Norway rendered necessary.

It may be as well to state here the first four articles of this convention:

"Art. I. His Royal Highness Prince Christian shall, according to the mode fixed by the Constitution of Norway, convocate, without delay, the 'Storting' (National Assembly) of the Kingdom of Norway, which is to be opened on the last day of September, or, if this be not possible, within the first eight days of October.

"Art. II. His Majesty the King of Sweden will place himself in direct negotiation with the 'Storting,' by one or more commissioners whom he will name.

"Art. III. His Majesty the King of Sweden promises to acknowledge the constitution made by the delegates in the National Assembly at Eidsvoll. His Majesty will not propose any other change except such as may be necessary for the union of the two kingdoms, and binds himself not to do this till after consultation with the 'Storting.'"

"Art. IV. The promises which have been given to the Norwegian people by his Majesty the King of Sweden, as well as by his Royal Highness the Crown Prince, in his name, will be conscientiously fulfilled, and confirmed by his Majesty before the Norwegian 'Storting.'"

The "Storting" assembled on the 7th of October, and on the 4th of the following November the King of Sweden was unanimously elected King of Norway, and the constitution, with the modifications required by the union of the two countries, voted by the "Storting," and on the 10th of the same month confirmed by the King of Sweden. The first paragraph of this constitution reads:

"The Kingdom of Norway is a free, independent, inalienable, and indivisible kingdom, united with Sweden under one King. The form of its Government is a limited and hereditary monarchy."

Thus, by the far-seeing wisdom of King Charles John; by the noble moderation of the Swedish nation; and by the love of national independence of the Norwegian people, a permanent union was established, more durable in its foundation and prosperous in its consequences than any right of conquest.

In the following year the Swedish Diet and the Norwegian "Storting" agreed upon the terms of the compact of Union called the "Rigs-Act," which was confirmed by the King on the 6th of August, 1815.

The preamble of the 1st article of this act (taken from a Norwegian copy, as are all the other quotations here given) reads as follows:

"We, the undersigned Representatives of the Kingdom of Norway, united in Christiania in an ordinary storting; and we, the Orders of Sweden, &c. &c., united in an Extraordinary Diet at Stockholm, make known: That whereas, by the mighty aid of Providence, a bond of compact has happily been established between the peoples of Scandinavia, which being made not by the force of arms, but by that of free conviction, ought to and shall only be maintained by a mutual acknowledgment of the legal rights of the two nations to the defence of their common thrones; and whereas we, the undersigned Orders of the Kingdom of Sweden, upon the gracious proposition of his Majesty, dated the 12th of April last, concerning the new constitutional relations which have arisen from the union between Norway and Sweden, have acknowledged and confirmed, by our unanimous consent, the stipulations which in that respect have been introduced into the fundamental law of the Kingdom of Norway of the 4th of November, 1814, and which, with the reservation of our constitutional right as to such regulations as involve any change or modification in the fundamental law of Sweden, have been sanctioned and sworn to by our most gracious King and Sovereign, we, the legal representatives of the Kingdom of Norway, do hereby declare, have deemed no more appropriate and solemn of confirming the conditions of the union established between Sweden and Norway, under one King, but with separate laws of Government, than to agree upon fixing and introducing into a special compact those conditions as they follow, word for word."

"Sec. I. The Kingdom of Norway is a free, independent, inalienable, and indivisible kingdom, united with Sweden under one King, the form of its Government is a limited and hereditary monarchy." &c.

The stipulations in this compact have been carried into effect during the thirty-eight years which the union has lasted. The Administration of the two countries—their Legislatures, their armies and navies, their customs and monetary systems—are on a separate footing. Their diplomatic relations, however, are common, as a natural consequence of the union of the two kingdoms under the same King, and the identity of their common political interests in regard to foreign Powers.

It is further said, in the article in the National Intelligencer before alluded to, that—

"Though the Government is not by any means an oppressive one, it is obnoxious to the whole people, who are extremely desirous of returning to the rule of Denmark." It is entirely erroneous to suppose that any such feeling exists in Norway; far from it. Every patriotic Norwegian clings to the union by which the nationality of his country has been established, and a new and strong guarantee for the future attained, in the connection with the noble and kindred people of Sweden. The words of the compact of Union above quoted have been realized—that the bond which unites the two nations, and which was established on the ground of free consent, is to be maintained by mutual acknowledgment of their legal rights. And the union of the two nations of Scandinavia rests upon the secure basis of a common and due respect to their Sovereign, and on the brotherly feelings they entertain for each other.

NOTE BY THE EDITORS.

Our readers are under obligations to the sportive hypothesis, in our article in Saturday's paper, in which Norway was described as being "an appendage" of Sweden, since it has been the means of eliciting the foregoing particular and no doubt authentic account of the present actual relation of Norway to Sweden. We had no design to make a serious impression of ill-feeling existing between the two Peoples now quietly united under the Swedish crown; having assumed it, as the reader must have perceived, merely for the sake of argument. As far as we are informed there is no more wisely-administered or unexceptionable Government in all Europe than that of Sweden.

SMITHSONIAN LECTURES—GEOLOGY.

A course of twelve lectures on Geology is now in progress, in the Smithsonian Institution, by Prof. SILLIMAN, sen., of Yale College, on the evenings of Monday, Wednesday, and Friday, at 7½ o'clock, to continue through the month of February.

The principal object, as stated in the programme, is to explain the structure of the earth, as it has been ascertained by observation. Among the leading topics are—The elementary constitution of the earth, as chemistry has brought it to light.

The nature of the mineral masses of which the earth is composed, and the order of their arrangement, with a view of the powers by which the present condition of the globe has been produced.

The organic contents of the strata, including both plants and animals, with the order of their creation and extinction.

The economical applications of geology in relation to agriculture, architecture, engineering, and domestic economy.

The moral influence of geology, as illustrating the existence and attributes of God, and as affording satisfactory proof of the history of the creation, as contained in the Bible.

It was introduced by the speaker that, in his view, among the physical sciences geology yields only to astronomy in grandeur, while it is richer in the variety of its objects.

Astronomy depends for its observations upon one sense alone, aided by the telescope, while geology calls all the senses into action. The telescope reveals the remote worlds to man, while the microscope discovers organization in objects almost infinitely minute, even when they are converted into stone or iron. That part of the earth which is accessible to man is called the crust of the globe.

The sources of information regarding the structure of the globe are derived from all excavations and perforations, and from all sections, whether natural or artificial. From the inclination of the strata.

From volcanic ejections, and jets d'eau, and outbursts of fire, whether hot or cold.

From the igneous rocks, and from transported materials.

The elementary constitution of the earth is reducible to combustible bodies—metallic and non-metallic—and to those bodies which, by uniting with them, render them incombustible; the number of elements now known approaches sixty, of which about three-quarters are metals, and there are non-metallic combustibles, besides five other bodies, which, by combining with combustibles, render them incombustible.

The original state of matter is unknown to us. The nebular hypothesis was a splendid vision of a splendid mist, and has been embraced by many distinguished men. The original materials may have been elementary, and whether elementary or compound, they may have been in a nebular condition. In either case, their mutual action, whether by condensation or chemical combination, would produce a great efflux of light and heat, and would result in the production of such materials as the world now contains. Here the arrangement of the masses of the globe was explained from large diagrams, exhibiting the structure of the crust of the earth and of the deep interior, as far as known.

The powers that have, as secondary causes, produced these results were then adverted to, namely, fire and water; fire with all that it can melt, and water with all that it can dissolve.

The thermal and hot springs were adduced as proofs of internal heat, and general instances were named, as the Geysers of Iceland; the spouting hot fountains of the Azores; the hot springs of the Pyrenees; those of the Alps; the Laths of Nevada, near Naples; and of the Apennines, near to Lucra. The Artesian wells were mentioned for the same purpose, and particularly that of Grenelle, at Paris; and of Mendorf, in Luxemburg, Flanders; the former of the depth of two thousand feet, giving a temperature of 80°, and the latter of 95° at three thousand feet. These cases were merely introductory to the evidence of heat derived from volcanoes, and the general elevated temperature of the interior of the earth.

LECTURE II.

The subject of the *Internal Heat of the Earth* was resumed. It is independent of atmospheric temperature, whose extremes were stated with some facts regarding their effects.

Several instances of hot waters on the American continent were named; seventy springs on the Washita, Arkansas, from 92° to 151°; near the Great Salt Lake, from 132° to 136°; near the great Cascade Mountains, in Oregon, a copious fountain at the boiling temperature; at Lebanon, New York, copious thermal springs at summer heat. In Jamaica there are waters at 127°, and at Valencia, in South America, at 194°; in the Alleghanies, in Virginia, many springs from 64° to 108°.

VOLCANOE.—Definition.—They may break out anywhere, on the land or beneath the sea. They usually pile up hills and mountains; have been persistent in the globe ever since its creation, and will continue as long as it shall endure. A few are perennial, but most are intermittent. They are the chimneys or valves through which the internal heat finds vent and relief.

Phenomena, ordinary and attendant.—Earthquakes usually precede and accompany eruptions. Electrical manifestations are vivid and continuous. Smoke proceeds an eruption; sometimes in the form of a pine tree or of a spread umbrella.

Odors arise from the ground, oozing through the soil; they are often perceived by animals, from their greater acuteness of sense, and an instinctive impulse of impending danger sends them to their coverts.

Matters Emitted.—Gases, all of them dead: Aqueous vapor and water in muddy torrents; fishes in the jets. From snowy mountains, deluges from melted ice and snow. Sulphur, salts, alkaline and metallic. Currents of molten rock, congealing into compact lavas, and containing various crystallized minerals. Inflated lavas; Scoriae; Puzozolans. Compact glass; inflated glass, in the form of pumices; ashes, sands, agglutinated matters; fragments of rocks not melted; bombs.

Geographical Position of some principal Volcanic Vents and Lines.—Jean Mayen, between Greenland and Europe; Iceland, with its innumerable volcanoes and geysers; Scandinavia, not volcanic, but has earthquake tremors, and is rising out of the waves while Greenland is sinking. Following the islands: The Faroes, Shetlands, Orkneys, and Hebrides have igneous rocks without volcanoes. Britain, the same, but has thermal and hot waters. Buxton, Bristol, Bath—earthquakes, especially in Scotland.

Reserving, for the present, the volcanoes of continental Europe and the Mediterranean seas, we pass to the Azores, in the mid-Atlantic; altogether volcanic, rise of Sabrina Island in 1810-11. Madeira, igneous rocks; Canaries, Tenerife, 12,000 feet high; Cape de Verde; Ascension, with a crater; St. Helena, igneous and volcanic; and Tristan d'Acunha.

Turning the Cape of Good Hope, we find Bourbon and its perpetually eruptive volcano, and Mauritius not far off. Reported volcanoes in the Red Sea.

Pass to the Grecian Archipelago: Gulf of Santorin, Modon, Syra Milo; greater and lesser Shamen, and Thera; Smyrna; and the Katakakumene, (thoroughly burnt district).

Interior of Asia.—Dead Sea, earthquakes and lava; of Palestine; and in the interior, Mount Elborus, 16,000 feet high; Ararat, 14,000 to 15,000, full of lava; Erzeroom and its lava volcanoes, four hundred leagues east of the Caspian.

And in Tartary: Burning district of Baikon, near the Caspian, arising from naphtha and bitumen. Volcanic island in the Sea of Azof.

Returning to the Asiatic islands, we have Barren island and its volcanoes in the Bay of Bengal; Sumatra, 1,000 miles long and 65 broad; several volcanoes, usually smoking, and when the smoke ceases danger is apprehended.

Croton, in the straits of Sunda, with its powerful volcano, conning Sumatra and Java.

Java, 612 miles long by about 100 broad, has 3 large volcanic mountains, some of them over 10,000 feet high; average distance of the volcanoes 17 miles; eruptions chiefly of hot water and mud; no lava; very numerous salines and hot springs.

Then follow, in the same line, the volcanic islands of Bali-Lumbok, Sumbawa-Flores, and Timor, volcanic lines of 2,000 miles in extent, often attended with terrible phenomena.

Next, going away south to New Zealand, and back through the New Hebrides, New Caledonia, New Britain, New Ireland, and New Guinea, with volcanoes or volcanic indications more or less in all of them, we come north to the Moluccas, the Philippines, Formosa, Japan, and Japan, and Ladrones and the Philippine Islands. Most of these are volcanoes, and some of them are unquiescent. Formosa not volcanic, but often shaken by earthquakes.

In the Philippines, the volcanic border of Luzon, Mindanao, and the Philippine Islands or the Philippine Islands are almost continuous, and some of them of terrible power. The Asiatic volcanic islands form a line of 8,000 miles. The archipelago of the Aleutian Islands connects the volcanic system of Asia with that of America by the splendid volcanic mountains of Olanasea, where a fiery cone three to four thousand feet high has been raised out of the waves in the present era.

A system of volcanic action extends from the Aleutian islands to Quito, in South America. Alaska, in north latitude 60°, near Cook's inlet, is volcanic; then Mount Elias, 17,000 feet high, and Mount Edgecombe, of nearly the same height, and both are probably volcanic. Mount Edgecombe was eruptive in 1796.

In Oregon we have the Smoking Mountains: Mount Rainier, in 40° north latitude, 12,350 feet high, has three snowy peaks, and probably a crater. St. Helens is seen eighty miles at sea; height almost 10,000 feet. Mount Hood is snow-covered. No volcanic appearances between 57° and 49°.

In California peninsula are three to five active volcanoes, and onward to Mexico there are numerous dormant or extinct volcanoes.

In Mexico a regular line of volcanic mountains and plateaus crosses the continent from the Pacific to the Gulf of Mexico. This line passes through the city of Mexico, and embraces Ixtapalapa, Orizaba, Popocatepetl, Tuxtla, Puebla, &c.

The windward West India islands are all volcanic. Grenada, St. Vincent, St. Lucia, Dominica, Guadalupe, and several more.

Then we have on the continent of South America the long range of lofty volcanoes extending through the whole length of Central America, averaging a volcano for every fifteen miles, with frequent and destructive earthquakes and eruptions. The volcanoes of Quito, near the equator, and among the most stupendous, including Chimborazo and Cotacachi.

The Bolivian and Chilean volcanoes are too numerous to be specified.

There are 14 degrees of latitude between the volcanoes of Quito and those of Bolivia.

Those of Chile extend from 30° south to 46° south, and are attended by tremendous earthquakes of very frequent occurrence.

On the whole, the western side of the Americas, especially of South America, may be regarded as volcanic, while the eastern side is nearly free.

There are important groups of volcanic islands in the Pacific.

The Galapagos, under the equator, and 500 miles west of South America, have 2,000 volcanic cones, and some are in action.

The Sandwich Islands are altogether volcanic, and Kilaua, in the island of Hawaii, is the most remarkable volcano in the world, being open like a caldron, and having a crater 1,000 feet deep.

The Friendly Islands are, in part, volcanic, having Tofua and Amargua in 20° south.

Capt. Cook saw a large volcano in Taoma, one of the New Hebrides.

LECTURE III.

CONTINENTAL EUROPE.—There is a range of extinct volcanoes between Andernach and Cologne, on the Rhine; there are both volcanic cones and craters, some of which are filled with water. The tarras of this region is ancient pumice; it has been much used in making hydraulic mortar. France has an extensive region of extinct volcanoes on the Rhone: cones, craters, currents of lava, and hot springs are numerous here in the districts of Auvergne, Velay, and Vivarais; and there are here ancient Roman baths: still no tradition of actual eruptions exists in this volcanic district.

Spain has a similar but more limited volcanic region in Catalonia. Fourteen entire cones form a continued line near Olot, and the streams of water have cut forty feet deep through currents of lava.

In Hungary, Transylvania, and Silesia the mountains are full of volcanic products.

Sardinia has a distinct line of volcanoes, with congealed lava streams.

Italy—the Egeanean hills in the north are volcanic. Near Padua there are cones and springs of hot water. In Mount Belva, near Verona, there are calcareous rocks full of fishes, and covered by volcanic or igneous rocks. On the road to Rome there are several lakes occupying ancient craters.

In Tuscany, near Volterra, the lagoons or marshes afford boiling water, containing boracic acid; there are subterranean thunder, and the boilers containing the water charged with boracic acid are heated by the water of the lagoons.

Rome stands upon travertine. This is a fresh-water limestone, which reposes upon volcanic tufa, puzozolans, and